

We claim:

1. A polymeric composition comprising:
a polymeric resin;
a conductive filler; and
a dispersion-control agent that promotes generally-uniform arrangement of the conductive filler throughout the polymeric composition, wherein
said polymeric composition is substantially devoid of polycyclic aromatic compounds.
2. The polymeric composition of claim 1, wherein the polymeric network comprises a thermoplastic polymer.
3. The polymeric composition of claim 1, wherein the polymeric network comprises a thermosetting polymer.
4. The polymeric composition of claim 1, wherein the polymeric network comprises a polymer selected from the group consisting of Polyamides, Polyesters, and Polyolefins.
5. The polymeric composition of claim 1 wherein the conductive filler is selected from the group consisting of carbon black, conductive carbon black, and a carbon nanotube.
6. A polymeric composition comprising:
a polymeric resin;
a conductive filler; and

an effective amount of a non-conducting filler to increase the electrical conductivity of the polymeric composition relative to the same composition without the addition of sub micron to nano sized particles, wherein

the polymeric composition is substantially devoid of polycyclic aromatic compounds.

7. The polymeric composition of claim 6, wherein the conductive filler is selected from the group consisting of carbon black, conductive carbon black, and a carbon nanotube.

8. The polymeric composition of claim 6, wherein the non-conducting filler is a particulate filler having a sub-micron or nanometer particle size.

9. The polymeric composition of claim 6, wherein the polymeric composition has a percolation threshold that is lower than a percolation threshold of the same polymeric composition without the non-conducting filler.

10. A polymeric composition comprising:

a polymeric resin;

a conductive filler; and

an effective amount of sub-micron to nano-sized non-conducting particles to lower the percolation threshold relative to the percolation threshold of the same polymeric composition without the sub-micron to nano-sized non-conducting particles, wherein

the polymeric composition is substantially devoid of polycyclic aromatic compounds.

11. A polymeric composition comprising:

a polymeric resin;

a conductive filler; and

an effective amount of a dispersion-control agent to minimize the sensitivity of electrical conductivity of the polymeric composition to changes in a concentration of the conductive filler in a desired region of electrical conductivity, wherein

the polymeric composition is substantially devoid of polycyclic aromatic compounds.

12. A method for controlling the electrical conductivity of a polymeric composition, the method comprising the steps of:

identifying a desired range of electrical conductivity, said range including a target electrical conductivity therein;

introducing an effective amount of a dispersion-control agent to a polymeric resin to minimize the sensitivity of the electrical conductivity of the polymeric composition within the desired region of electrical conductivity; and

introducing a conductive filler to the polymeric resin to provide the polymeric composition with the target electrical conductivity.